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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/052,707	01/17/2002	Mark Sandford	LS/0015.01	1392

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EXAMINER

NGUYEN, HAU H

ART UNIT PAPER NUMBER

2676

DATE MAILED: 05/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/052,707

Applicant(s)

SANDFORD, MARK

Examiner

Hau H Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 March 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-18 is/are allowed.
- 6) ☒ Claim(s) 19-23 is/are rejected.
- 7) ☐ Claim(s) 24-26 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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***Allowable Subject Matter***

1. Claims 1-18 are allowed.

***Reasons for Allowance***

2. The following is an examiner's statement of reasons for allowable subject matter:

The prior art taken singly or in combination does not teach or suggest, a method for providing a processor access to image data, among other things, comprising creating a first, second, and third swappable windows.

The closest prior art, Watkins (U.S. Patent No. 4,954,819) teaches rotating of two windows.

However, reference Watkins does not teach creating three swappable windows, in which two windows are available, and the other being loaded in a background memory.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. Claims 19-23 are rejected under 35 U.S.C. 102(a) as being anticipated by Engstrom et al. (U.S. Patent No. 5,801,717).

Referring to claims 19 and 23, Engstrom et al. teach a display device interface and associated methods for managing surface memory. A surface includes a pixmap image, or other two-dimensional image data such as an array of depth values (z), or an array of transparency values (alpha) (col. 4, lines 26-33). Engstrom et al. further teach a surface can also be a texture

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map. A texture map is a two dimensional image that is mapped to the surface of a 3D graphical model. To summarize briefly, the process of texture mapping involves taking one or more samples from the texture map and computing the contribution of these samples on a pixel in a target image. The sampling process can be as simple as taking the nearest sample to a point mapped from the target back into the texture map (a first control mechanism). A primary surface represents the pixmap image that the user is currently viewing on the display screen. More specifically, the primary surface is the surface that the display hardware is currently reading, converting to analog values, and displaying on the monitor (active image storage element). The designation as a "primary" surface also differentiates the surface from an "off-screen" surface (not currently active image storage element), which is not displayed directly but can be used to construct a display image (col. 13, lines 15-42). Engstrom et al. also teach the display device interface supports double buffering (see also col. 3, lines 55-66) as well as buffering among more than two surfaces by creating a complex surface structure comprising a front buffer and one or more back buffers. The front buffer typically holds a completed pixmap that is ready for use by some client of the interface. A back buffer can hold a completed pixmap that is queued for use by a client, or a pixmap that is under construction. The surface singled out as the back buffer is the one that will be visible next (background loading). The display interface includes a flip function (a second control mechanism) that operates on the flipping structure. In response to a single call to this flip function, the surface structures including the front and back buffer structures 150 and 152 (Figs. 4A and 4B), remain constant from the perspective of the application. The flip function controls the details of the flip operation by determining when the underlying surface memory can be swapped and by keeping track of the specific location of the

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underlying surface memory. To perform a flip on a structure with one front and one back buffer, the interface swaps or "flips" the reference pointers 150, 152. After the flip, the front buffer is reference pointer 156 refers to region B 160 and the back buffer reference pointer 154 refers to region A 158 (col. 14, lines 10-56).

In regard to claim 20, Engstrom double buffering, refers to a technique for generating a display image in which, two different physical memory buffers or two different regions in video memory are used to generate an image. While the first image is being rendered to the back buffer, the display hardware scans out a complete image from the front buffer. To update the display with a new image, the display hardware then performs a buffer swap. The display image that was just under construction is then used as the source for the display screen, and a new image is constructed in the buffer that held the previous display image (col. 3, lines 55-66). Therefore, it is implied that upon activation of a swap function, the active buffer (front buffer) is no longer active.

In regard to claim 21, Engstrom et al. teach a low level interface can have a DMA engine (col. 2, lines 37-43).

Referring to claim 22, Engstrom et al. teach double buffering is necessary to prevent the display hardware from displaying the pixels in a region in video memory before the application has finished drawing all of the pixels composing that display image in that region of video memory (col. 3, lines 66-67, and col. 4, lines 1-3). Therefore, it can be inferred from Engstrom reference that in a low level interface, a DMA engine can be used to interrupt the processor when background loading is complete.

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5. Claims 23-26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

*Conclusion*

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hau H. Nguyen whose telephone number is: 703-305-4104. The examiner can normally be reached on MON-FRI from 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on 703-308-6829.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D. C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered response should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.



H. Nguyen

05/11/2004

MATTHEW C. BELLA  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600